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09/737,603	12/18/2000	Siegbert Steinlechner	R 36559	1692

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EXAMINER

TUNG, TA HSUNG

ART UNIT

PAPER NUMBER

1753

DATE MAILED: 05/16/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/737,603

Applicant(s)

STEINLECHNER

BEAL

Examiner

T. TUNG

Group Art Unit

1753

Paper No-8

— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address —

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- ☐ Responsive to communication(s) filed on \_\_\_\_\_
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- ☒ Claim(s) 1-5 is/are pending in the application.
- ☐ Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- ☒ Claim(s) 1-5 is/are rejected.
- ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- ☐ Claim(s) \_\_\_\_\_ are subject to restriction or election requirement

## Application Papers

- ☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119 (a)-(d)

- ☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).

☒ All ☐ Some\* ☐ None of the:

- ☒ Certified copies of the priority documents have been received.
- ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_
- ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

\*Certified copies not received: \_\_\_\_\_

## Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_
- ☐ Interview Summary, PTO-413
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Other \_\_\_\_\_

Office Action Summary

Art Unit: 1102

Claims 1-5 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The disclosure is inadequate and confusing.

First, the claim language appears to be inconsistent with the drawings. For example, the wording at claim 1, lines 13-20 call for the generation of three pump currents between a first oxygen pump electrode (8) and an external pump electrode (10), between a second oxygen pump electrode (9) and the external pump electrode, and between a nitrogen oxide pump electrode (7) and the external pump electrode. Thus, in all cases, the pump current involves the external pump electrode. However, from figure 1 of the drawings, only the first oxygen pump electrode (8) is connected to the external pump electrode (10). Electrodes (9) and (7) are not shown to be connected to electrode (10). Thus, the second oxygen pump current and the nitrogen oxide pump current can not be derived from the external pump electrode contrary to the claim language. This inconsistency in the disclosure needs to be resolved without the introduction of new matter. Also, if there be any errors in figure 1 (and/or other figures) of the drawings, correction must be made.

Second, it is not evident what are "pregivable voltages" as set forth at claim 1, line 13. The word "pregivable" does not appear to be in the dictionary. The meaning and the supporting disclosure of such voltages are vague.

Art Unit: 1102

Claims 1-5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is not evident whether applicant's claim language positively claims the sensor structure or not. The wording "circuit arrangement for operating an exhaust-gas probe" at claim 1, line 1 would suggest not. However, the wording at lines 13-20 of claim 1 suggests that the sensor is being positively claimed because the pumping currents are generated from electrodes and electrolytes of the sensor.

The sensor should be positively claimed in order to particularly point the invention. There is no evidence that the circuit by itself has any utility independent of the sensor. Accordingly, it is suggested that the preamble of claim 1 be amended to clearly positively claim the sensor. If that is done, corresponding changes should be made in the preambles of the dependent claims.

Claim 1, line 13, "pregivable voltages" is not understood.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
- (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

Art Unit: 1102

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 are rejected under 35 U.S.C. 102(b,b,e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Okazaki et al 5,810,997, Kurokawa et al 5,980,710 or Miyata et al 6,228,252.

Okazaka discloses a solid electrolyte sensor comprising a measuring circuit with switching means (24, 25) for providing different voltages. See figure 1; col. 2, line 19 to col. 3, line 15.

Kurokawa discloses discloses a solid electrolyte sensor comprising a measuring circuit with switching means (18). See figure 1; col. 7, line 30 to col. 21, line 45.

Miyata discloses a solid electrolyte sensor comprising a measuring circuit with switching means (SW1, SW2, SW3). See figure 1; col. 12, line 35 to col. 16, line 6.

In as much as it is not clear just what elements are being positively claimed by applicant's claims or how the elements are actually related, these claims are considered to describe at best an obvious variant of the references.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sugiyama et al 6,332,965 in view of Okazaka et al, Kurokawa et al or Miyata et al.

Art Unit: 1102

Sugiyama discloses a solid electrolyte NOX sensor including means for generating pump currents at cells (21, 31, 41). See figure 1; col. 5, line 15 to col. 10, line 32. Applicant's claims differ by calling for a switching means to provide the voltage sources for the current generation.

As discussed before, the secondary references each discloses in a solid electrolyte sensor switching means for providing voltage sources. It would have been obvious for Sugiyama to adopt the switching means of the secondary references, because a switch provides multiple voltage sources from a single element. This would simplify the circuitry and reduce cost.

Kato et al 6,076,393 and Tojo et al 6,068,747 disclose solid electrolyte NOX sensors.

The examiner can be reached at 703-308-3329. His supervisor Nam Nguyen can be reached at 703-308-3322. Any general inquiry should be directed to the receptionist at 703-308-0661. A fax number for TC 1700 is 703-872-9310.



Ta Tung

Primary Examiner

Art Unit 1753